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## PATENT ABSTRACTS OF JAPAN

(11)Publication number: 07288341

(43)Date of publication of application: 31.10.1995

(51)Int.CI.

H01L 33/00

(21)Application number: 06078293

(22)Date of filing: 18.04.1994

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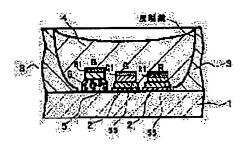
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(54) LED DISPLAY

## (57)Abstract:

PURPOSE: To improve the external quantum efficiency of a blue LED chip, in the realization of a full-color LED display using the blue LED chips each of which comprises gallium nitride based compound semiconductors.

CONSTITUTION: On a printed circuit board 1 on whose surface a conductor layer 2 is formed, at least, blue, green and red LED chips B, G, R are mounted, and the whole of the three LED chips is molded, and thereby, one picture element of an LED display is formed. The blue LED chip comprises a gallium nitride based compound semiconductor LED chip wherein on a sapphire substrate gallium nitride based compound semiconductors are laminated. Further, the sapphire substrate of the gallium nitride based compound semiconductor chip is bonded to the printed circuit board 1 via a transparent or white insulation bonding agant 5.



**LEGAL STATUS** 

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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